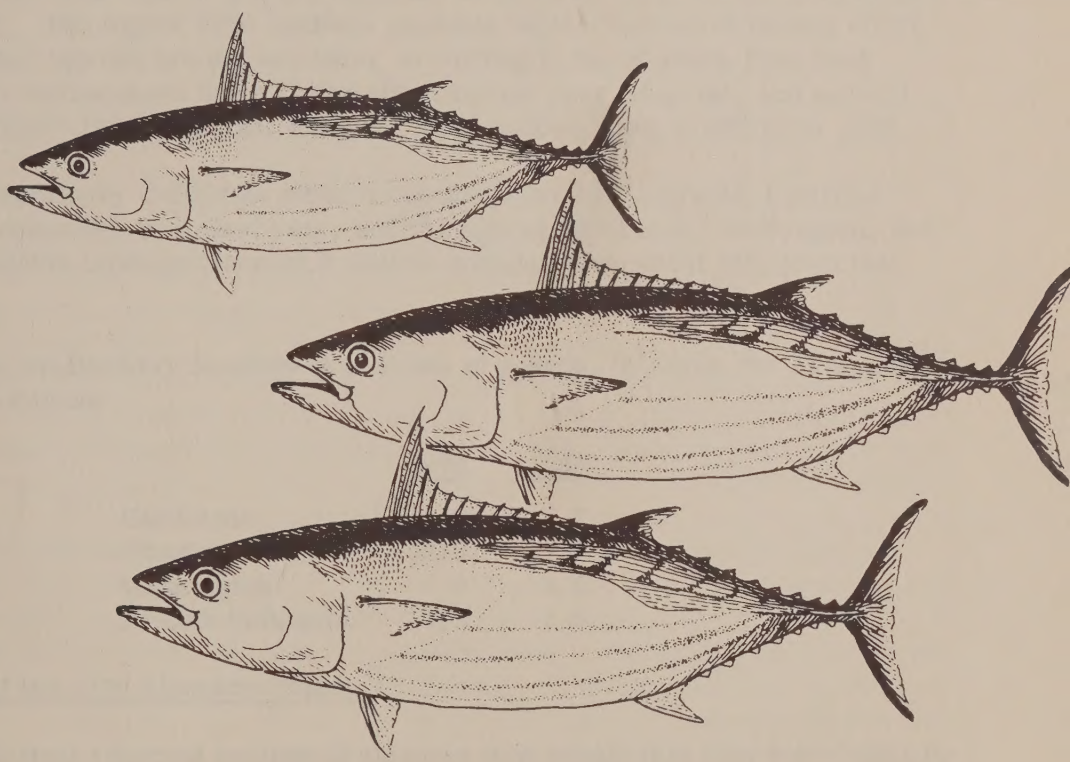
UNITED STATES
PARTMENT OF
OMMERCE
UBLICATION

NOVEMBER 1970

# FISHING INFORMATION

UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION



NATIONAL
MARINE
FISHERIES
SERVICE

FISHERY-
NOGRAPHY
CENTER
LA JOLLA,
CALIFORNIA

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# ALBACORE LANDINGS FOR 1970 SEASON

Preliminary west coast landings for the 1970 albacore season are 55.0 million pounds (27,500 tons) which is higher than the 1969 total, 50.5 million pounds (25,250 tons) and 1960-1969 average, 45.7 million pounds (22,850 tons). A very small number of jig boats were still fishing, weather permitting, off central California mainly between Monterey and Morro Bay at the end of November; however, additional catches are not expected to boost the total for the 1970 season significantly. The higher 1970 landings probably reflect increased fishing effort. Although exact figures are not available, according to the Western Fish Boat Owners Association more boats fished albacore this year than last, and several fishermen report that their total catch for 1970 is down about 5-20% from 1969.

Preliminary California albacore landings for 1970 were 28.1 million pounds, up about 91% from last year, and the aggregate Oregon, Washington, and British Columbia landings were 26.9 million pounds, down about 28% from last year.

The preliminary landings in millions of pounds, by state, for 1970 and 1969 are as follows:

| | 1970 | 1969 |
|---|---|---|
| California | 28.1 | 14.7 |
| Oregon | 22.5 | 29.8 |
| Washington | 2.9 | 3.5 |
| British Columbia | 1.5 | 2.5 |

## Highlights of the 1970 Albacore Season

The first reported catches of albacore tuna caught this year were made by the NMFS R/V DAVID STARR JORDAN on a preseason albacore scouting cruise off the coasts of California and Oregon between June 22 and July 2. Three albacore were taken near San Juan Seamount; however, larger numbers, about 100 fish, were taken between Point Sur and Point Arena, about 300 miles offshore.

The albacore price settlement of $550 per ton delivered to canneries, was reached on July 15, and the season got off to a fast start. Good fishing developed quickly in the Eureka to Crescent City area with smaller catches taken off the central Oregon coast. However, good fishing off northern California lasted only a few days as high winds and sloppy seas reduced fishing activity there and by July 20, the fishery moved further to the north.

The best fishing since 1967 was reported off Oregon during the last week of July and fish landings in Astoria were at a record rate. Although this season started 15 days later than last year, the albacore landings for July this year were well over double of what they were in July 1969. However, after almost record landings of nearly 4,000 tons of albacore for the month of July, the albacore jig fishery off Oregon collapsed during the first week of August and did not re-develop. This event was unexpected and happened abruptly.

In spite of large-scale scouting during the first week of August, fishermen were not able to get back on the fish in the offshore area from southern Oregon to Vancouver Island. However, indications of good fishing and fair weather were found off northern California on August 5. Unfortunately, the traditional windy weather than usually occurs in this area during this time of the year resumed and caused most of the fleet to return to port at Eureka by August 9. High winds and sloppy seas continued to seriously hamper fishing in this area; however, a portion of the fleet returned to sea off northern California by August 11, and reported good fishing in rough weather.

While the albacore fishing off Oregon ebbed during the first 2 weeks of August, it increased off southern California to the best level in about 3 years. A small fleet began fishing near the 213 fathom spot off San Diego during the first week of August and averaged about 100 fish (mostly 20-25 pound) per day with some single day scores as high as 250 fish. Fishing continued at this level, mostly by small bait boats, for about a month and landings in San Diego were the highest in several years.

Excellent jig fishing, with some 1,000 fish scores and many 600 fish scores, was reported on August 18 in the area near the compass rose outside San Juan Seamount. A large fleet of jig boats quickly gathered in the area from Rodriquez Dome to San Juan Seamount to about 80 miles southwest of Point Arguello. Good fishing, on 11-15 pound albacore, with catches averaging 250-300 fish per day continued in this area for about a week. But by August 25, most of the fleet that had been fishing here moved northward to Point Arena and San Francisco because of poor fishing and high winds.

By mid-August most of the larger California bait boats were fishing off Oregon and Washington. The best bait boat catches were made during September when on some days several boats reported catching 20-25 tons per day. However, for the most part bait boat fishing in the northwest was reported only as fair with catches ranging from 2-10 tons per day.

Rough weather along the central and northern California coasts prohibited jig fishing in any one area for more than a few days during the first two weeks in September. A few of the larger jig boats were able to fish during the rough weather, however most boats were locked into ports from Eureka to Morro Bay during the greater part of this period.

Excellent jig fishing developed in a large area off central California during the third week in September. The main activity was centered near and outside the Monterey Seavalley. Good catches were also reported about 30 miles southwest of Point Sur and outside Davidson Seamount. High winds and rough seas slowed fishing for a few days during the third week of September and most boats were forced into central California ports. However, as soon as the winds slackened, the large fleet of boats quickly got back on fish. By September 26, excellent fishing, associated with fair weather, was reported from Morro Bay to Point Arena. Fair weather during the third week of September also allowed very good fishing in a large area about 80 miles offshore between Cape Mendocino and Eureka. However, by September 22 most boats had left northern California waters because of high winds and lack of fish.

During the first 2 weeks of October the catches off northern and southern California declined and fishing effort was narrowed to the central California region (off San Francisco, Monterey, and Morro Bay). Most bait boats which had been fishing off Oregon and Washington moved to California waters closing out their season. The 1970 albacore season was essentially over by the second week of November, but a few boats were reported still catching small numbers of fish, mainly between Monterey and Morro Bay, at the end of November.

R/V DAVID STARR JORDAN conducted an 18-day albacore-oceanography cruise in October. The purpose of the cruise was to investigate the migration route followed by albacore when they leave the American west coast fishery near the end of the fishing season. Data were collected on the cruise to determine if albacore migrate out of the American fishery along the boundary of the transition zone between north Pacific and central Pacific waters. The cruise operations were in two parts. In Part I, JORDAN made a rapid north-south oceanographic transect of the region between latitudes 35-43° N along longitude 140° W, and the resulting data were analyzed aboard ship. In Part II of the operations, detailed fisheries investigations were made using standard techniques in north Pacific waters, central Pacific waters, and the transition zone waters as indicated by the environmental conditions encountered during Part I. Operations in Part II included trolling of 12 jig lines during daylight hours and making observations of the life history of albacore tuna by study of gonads, stomach contents, liver, and other vital statistics. Oceanographic observations were made during night hours to measure the distribution of environmental characteristics associated with the migration of the albacore and seasonal termination of the fishery off the American west coast.

Sea surface temperatures measured on the cruise were very near or above the upper limit of the optimal temperature range for albacore in all waters except subarctic waters. Albacore were caught only in subarctic waters (six landed and five lost) and small numbers of the dolphinfish, Coryphaena, were caught in the transition zone and north Pacific central waters. It appears that

albacore were migrating along a route associated with their optimal temperature range rather than along a boundary between water masses. However, because of the limited amount of fishing effort (8-12 lines fished 13-24 hours in each water mass) due to rough weather and other reasons, and small catches of albacore, the results are inconclusive.

R. Michael Laurs, Leader
Fishery-Oceanography Group

SEA SURFACE TEMPERATURE CHARTS, PACIFIC OCEAN
NOVEMBER 1970

Acknowledgements

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General Dynamics Convair Division; Ocean Data Buoy ALPHA
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National Oceanic and Atmospheric Administration
National Marine Fisheries Service, Biological Laboratories La Jolla, California; Honolulu, Hawaii; Seattle, Washington
National Weather Service, San Diego, California
National Ocean Survey, Pacific Marine Center, Seattle, Washington
Pacific Environment Institute, Fisheries Research Board of Canada, West Vancouver, British Columbia, by H. J. Hollister from observations by G. C. Wilks at Langara Island Light; R. J. Bourque at Cape St. James Light; Lily Collins at Kains Island Lightstation; O. A. Edwards at Amphitrite Point Light
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U.S. Coast Guard Cutters ACUSHNET, VENTUROUS
U.S. Naval Weather Service, Fleet Numerical Weather Central, Monterey, California
Fishing Vessel MARTINAC

Charts

Figure 1. --Mean sea surface temperature, eastern north Pacific Ocean. Squares show temperatures at weather ship stations. Numerals on shore are temperatures at coastal and lightship stations.

Figure 2. --Mean sea surface temperature chart, western north Pacific Ocean.

Figure 3. --Deviation of sea surface temperatures, eastern north Pacific Ocean from long term charts of H. O. 225. Hatched areas are colder in 1970.

Figure 4. --Deviation of sea surface temperatures, eastern north Pacific Ocean from those of November 1969. Hatched areas are colder in 1970.

Figure 5. --Mean sea surface temperature, eastern tropical Pacific Ocean. Numerals on shore are temperatures at coastal stations.

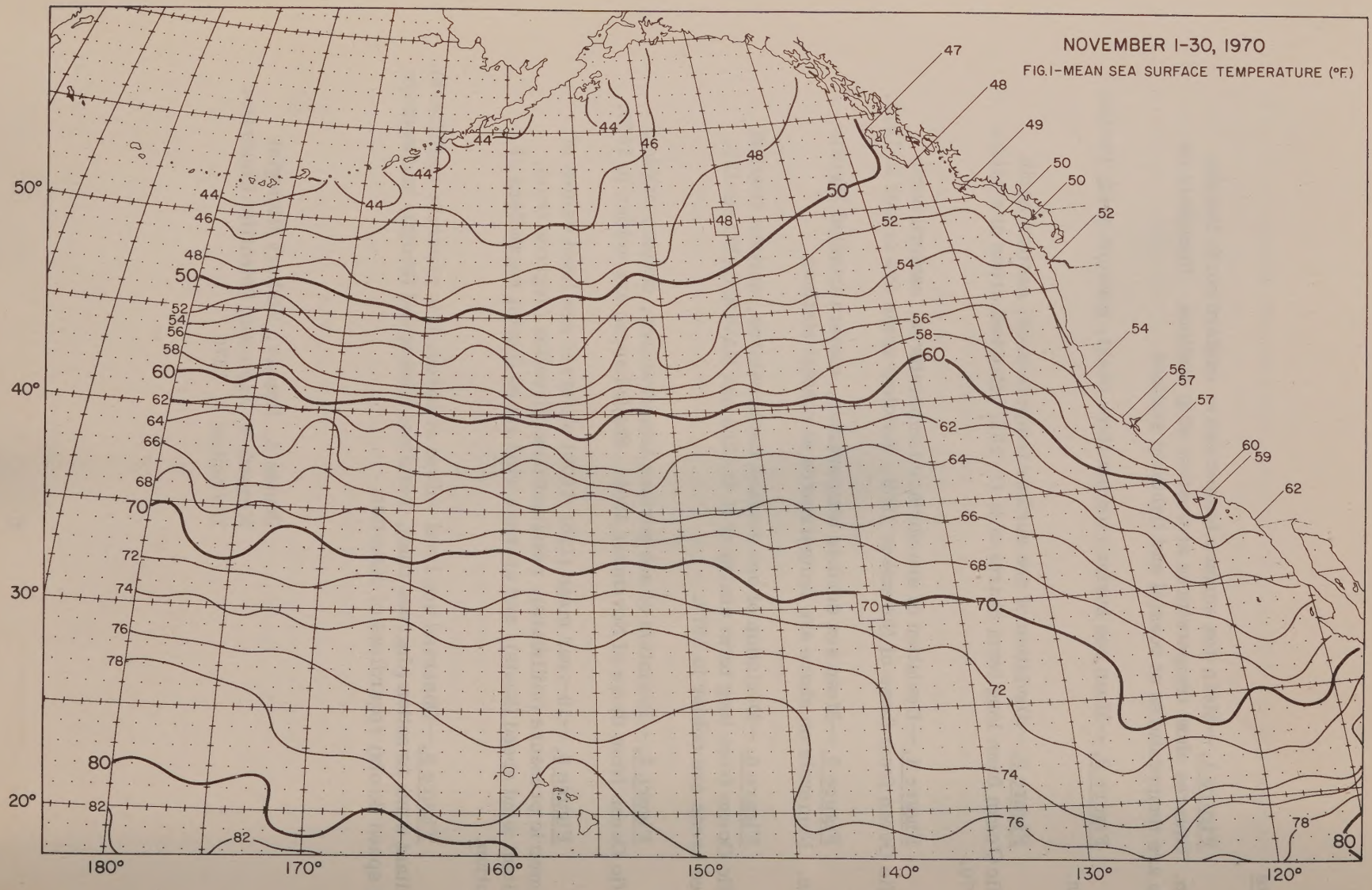
Figure 6. --Deviation of sea surface temperatures, eastern tropical Pacific Ocean from long term charts of H. O. 225 and NAVOCEANO sp-123. Shaded areas are colder in 1970.

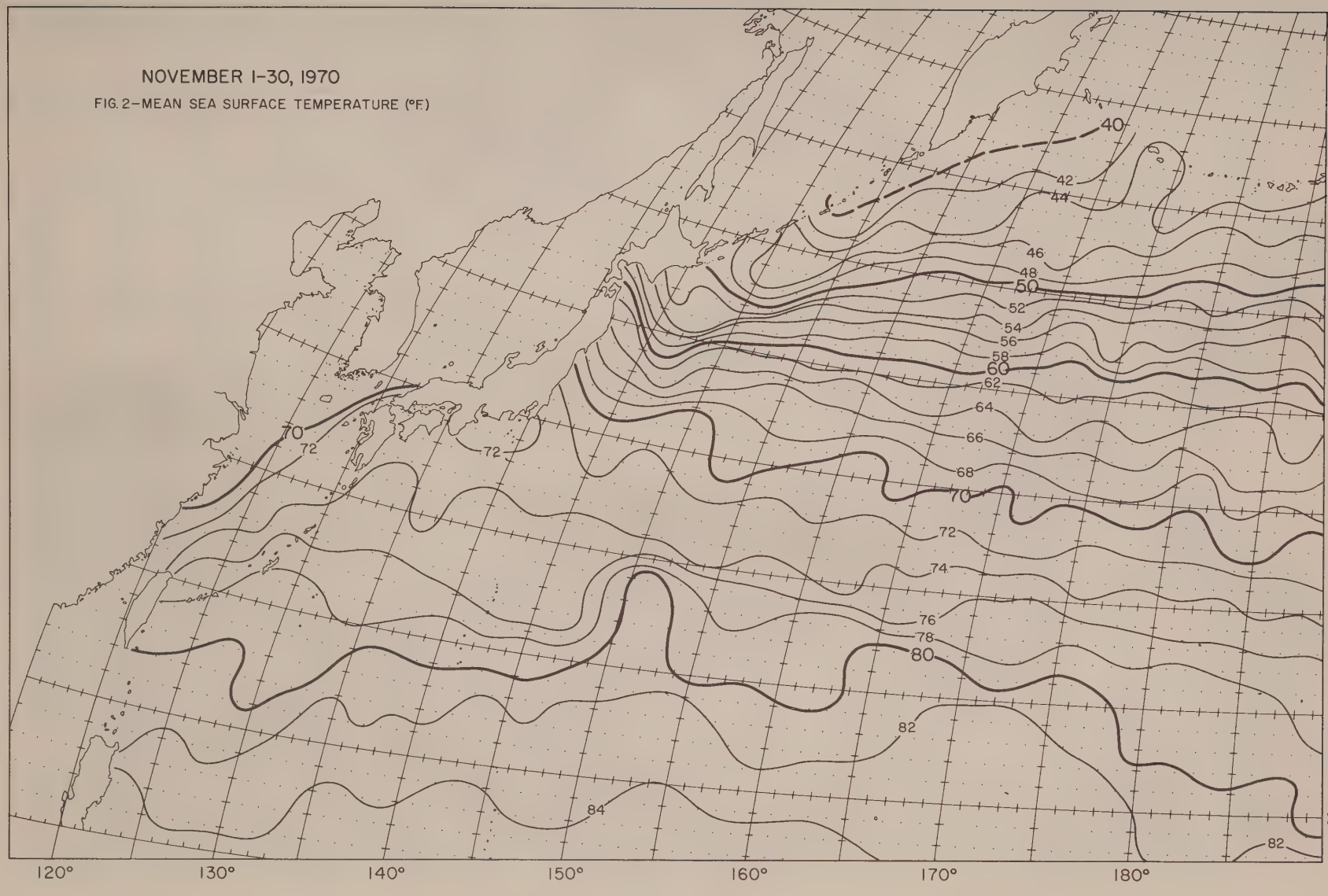
Figure 7. --Deviation of sea surface temperatures, eastern tropical Pacific Ocean from those of November 1969. Shaded areas are colder in 1970.

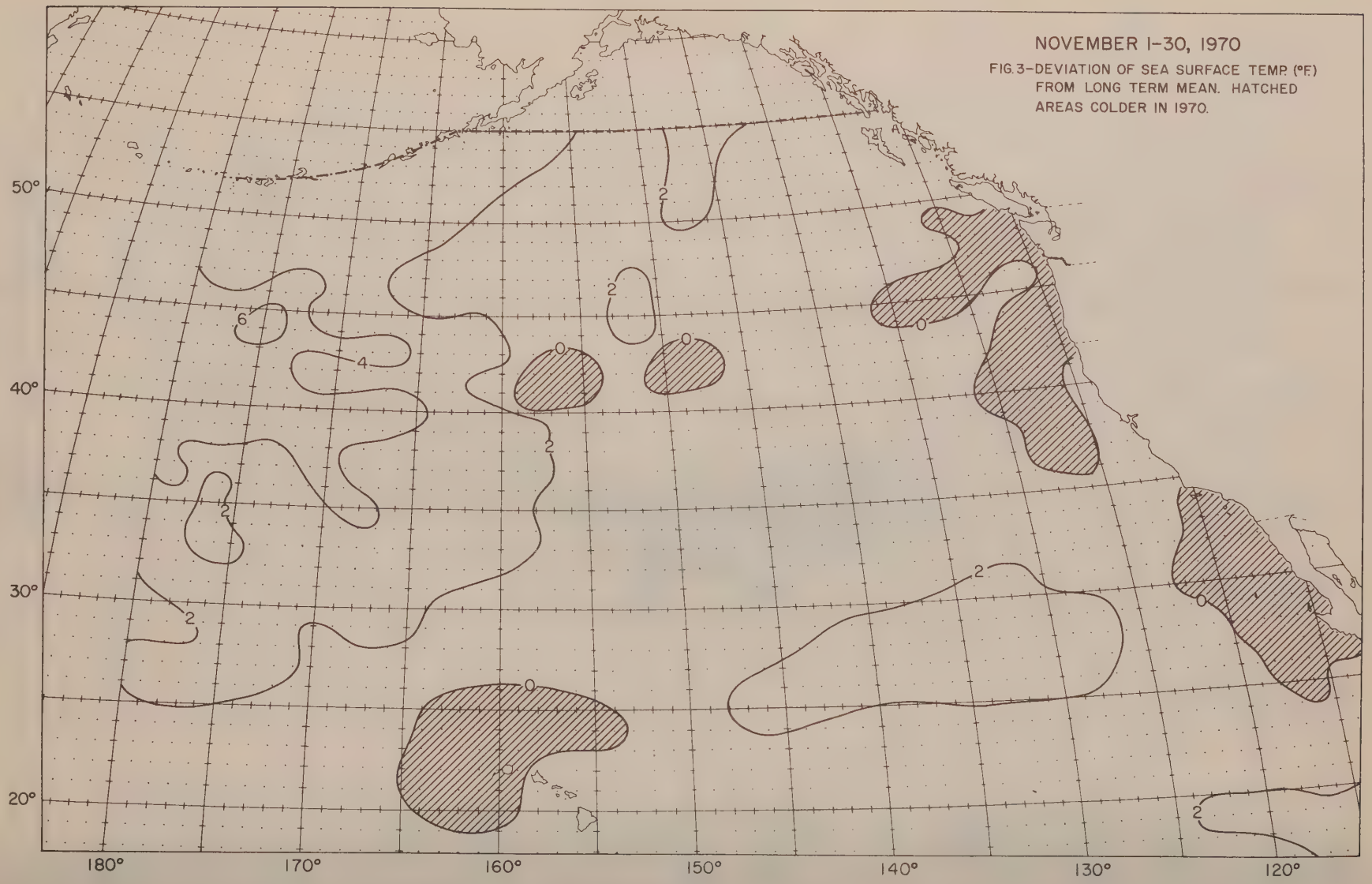
Figure 8. --10-year mean (1961-1970) observed sea level values of barometric pressure (millibars), resultant wind direction (degrees true), resultant wind speed (knots), and average wind speed (knots) regardless of direction.

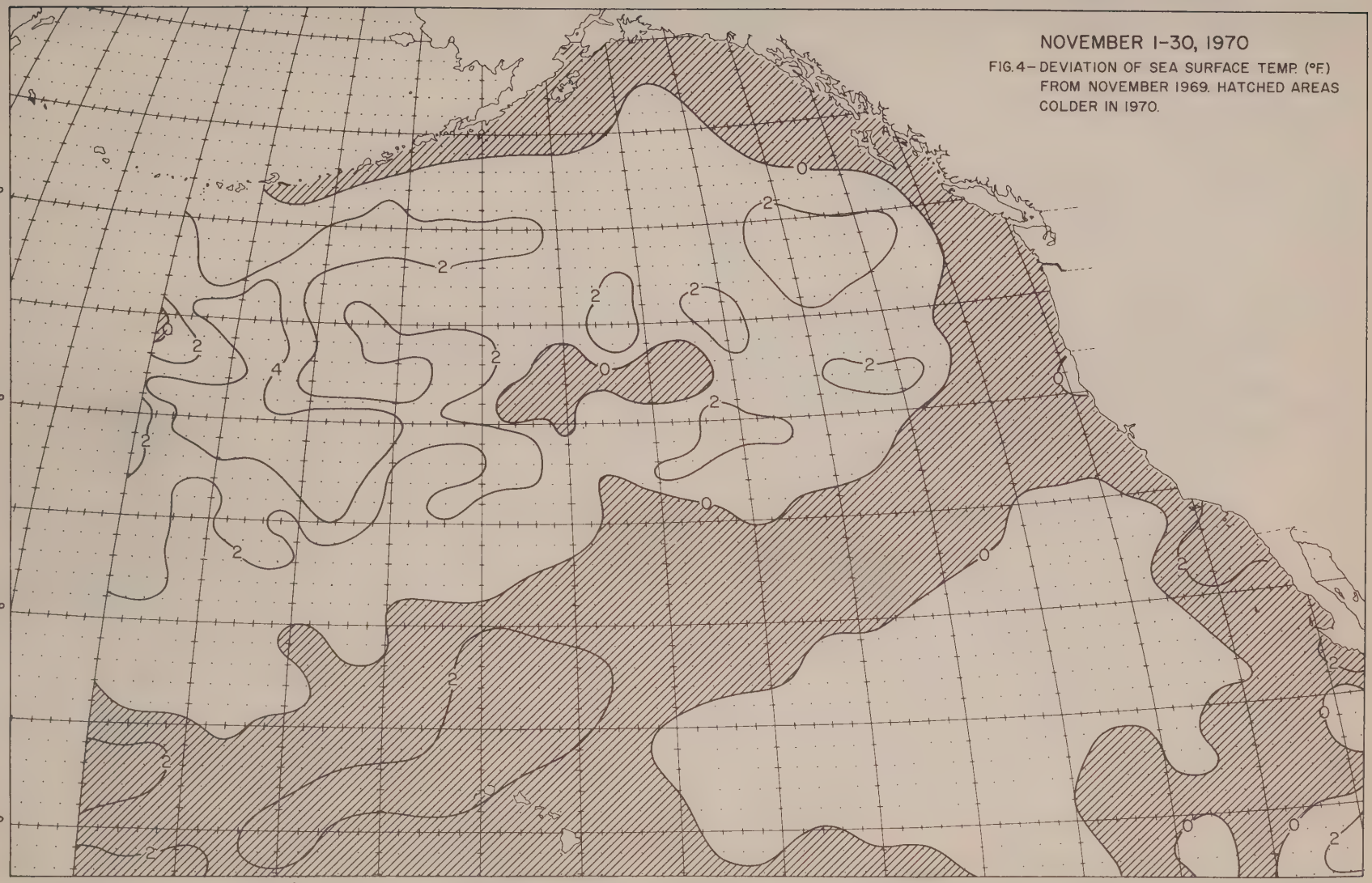
Figure 9.--Observed sea level values of barometric pressure (millibars), resultant wind direction (degrees true), resultant wind speed (knots), and average wind speed (knots) regardless of direction.

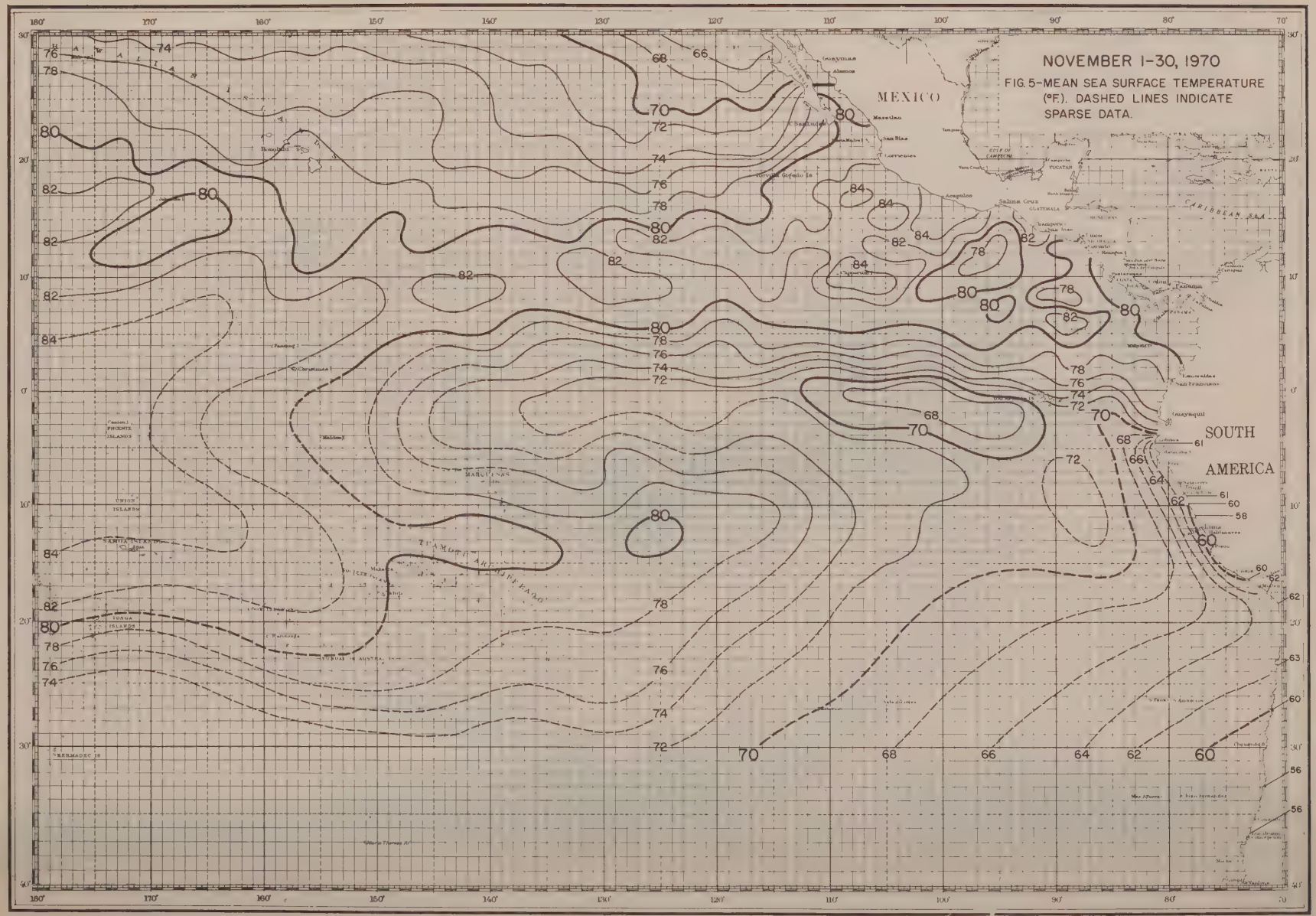
James A. Renner, Fishery Biologist
Kenneth S. Raymond, Scientific Illustrator
December 7, 1970

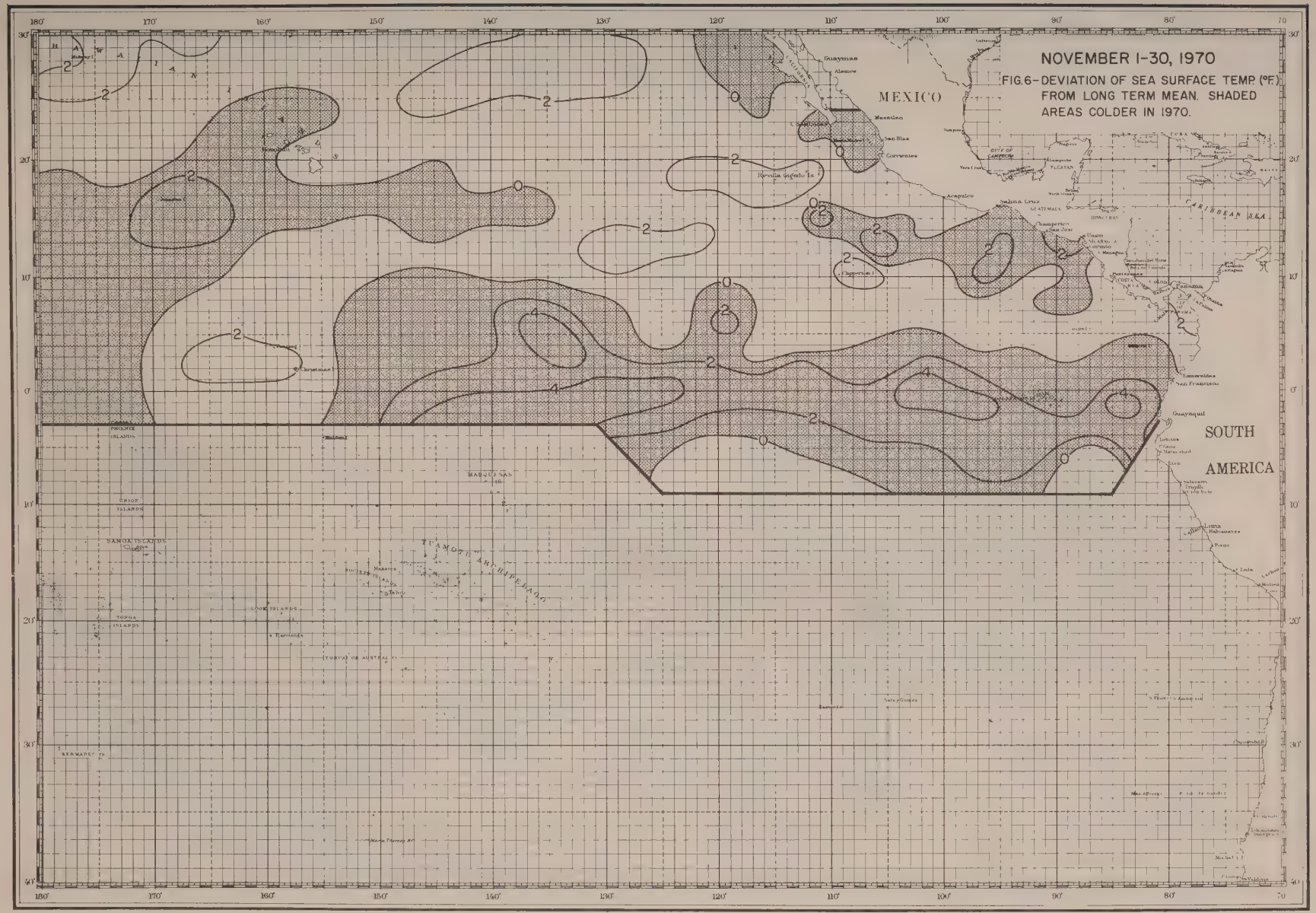

NOVEMBER 1-30, 1970
FIG.1-MEAN SEA SURFACE TEMPERATURE (°F.)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°

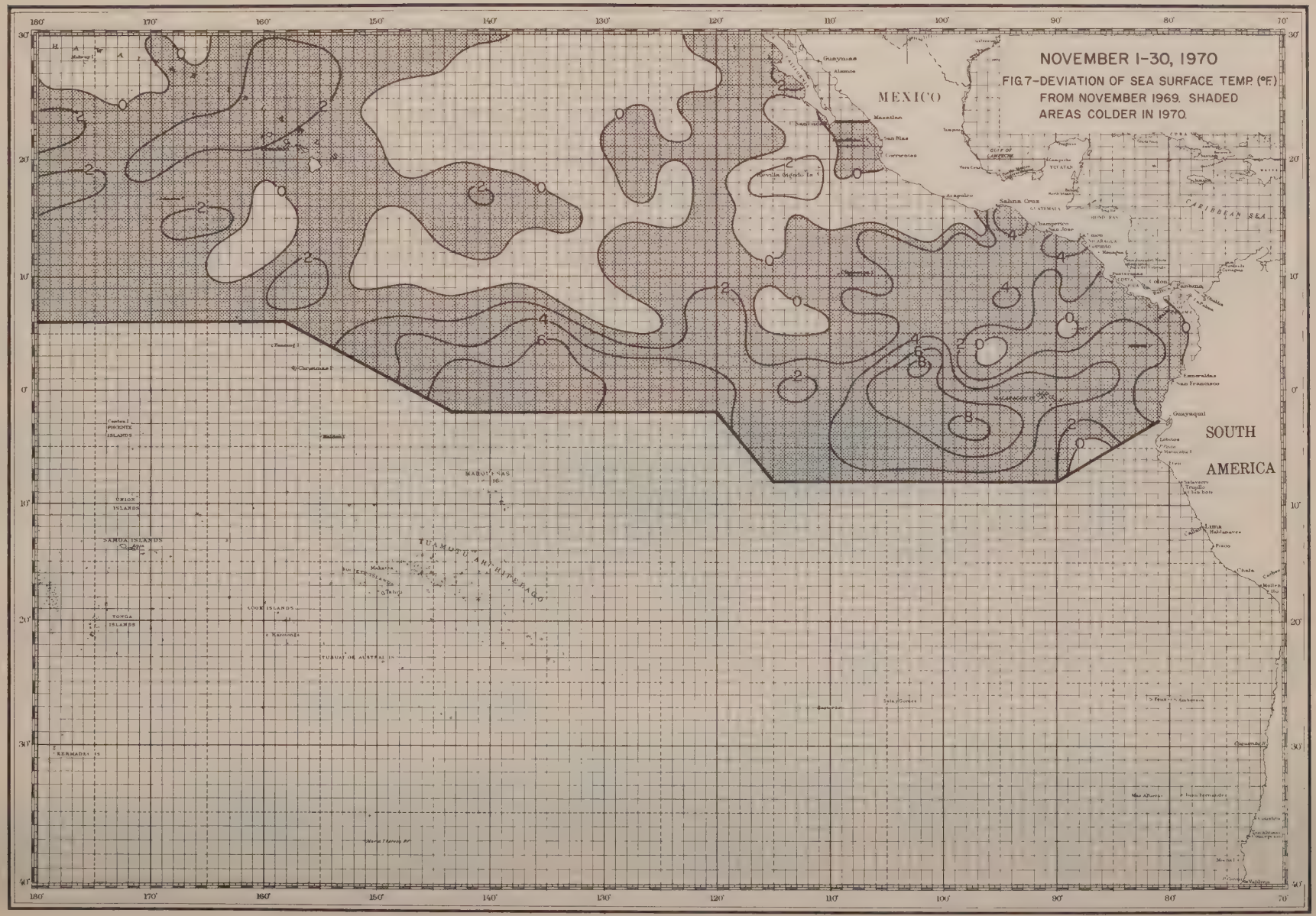

NOVEMBER 1-30, 1970
FIG. 2-MEAN SEA SURFACE TEMPERATURE (°F)
40
42
44
46
48
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
70
72
72
82
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°

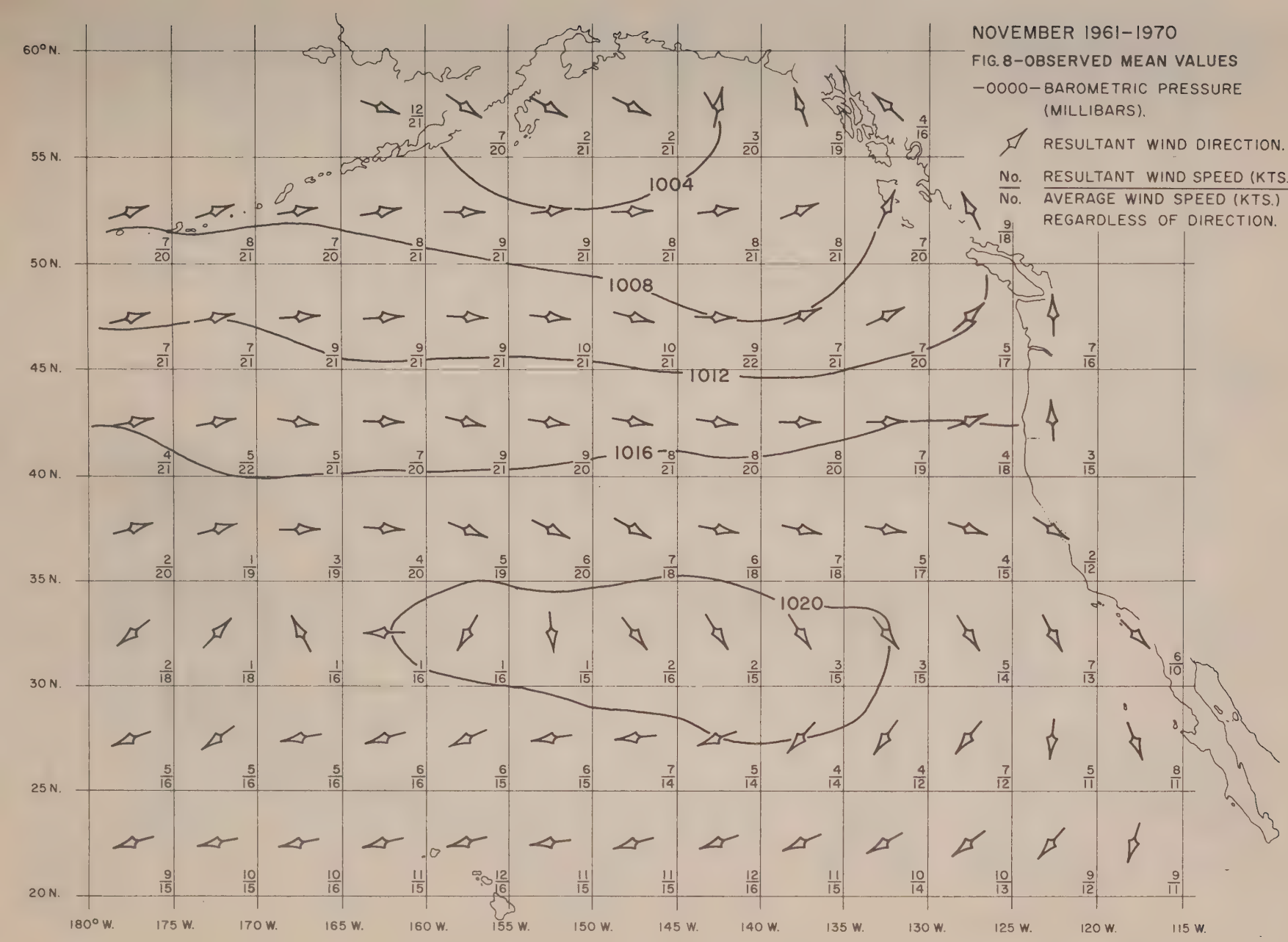

NOVEMBER 1-30, 1970
FIG. 3-DEVIATION OF SEA SURFACE TEMP. (°F.) FROM LONG TERM MEAN. HATCHED AREAS COLDER IN 1970.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
6
4
2
0

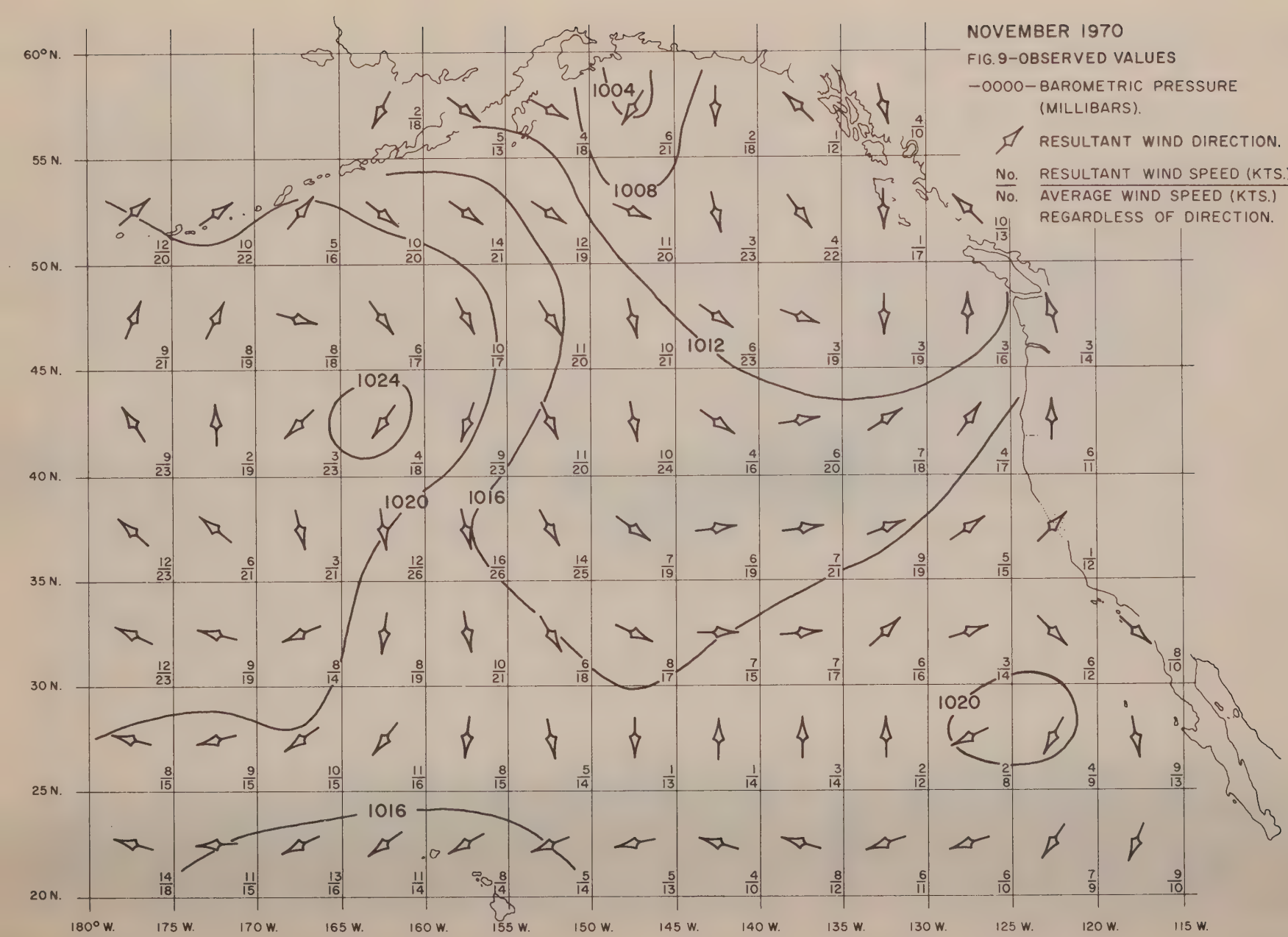

NOVEMBER 1-30, 1970
FIG. 4 – DEVIATION OF SEA SURFACE TEMP. (°F.) FROM NOVEMBER 1969. HATCHED AREAS COLDER IN 1970.
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°

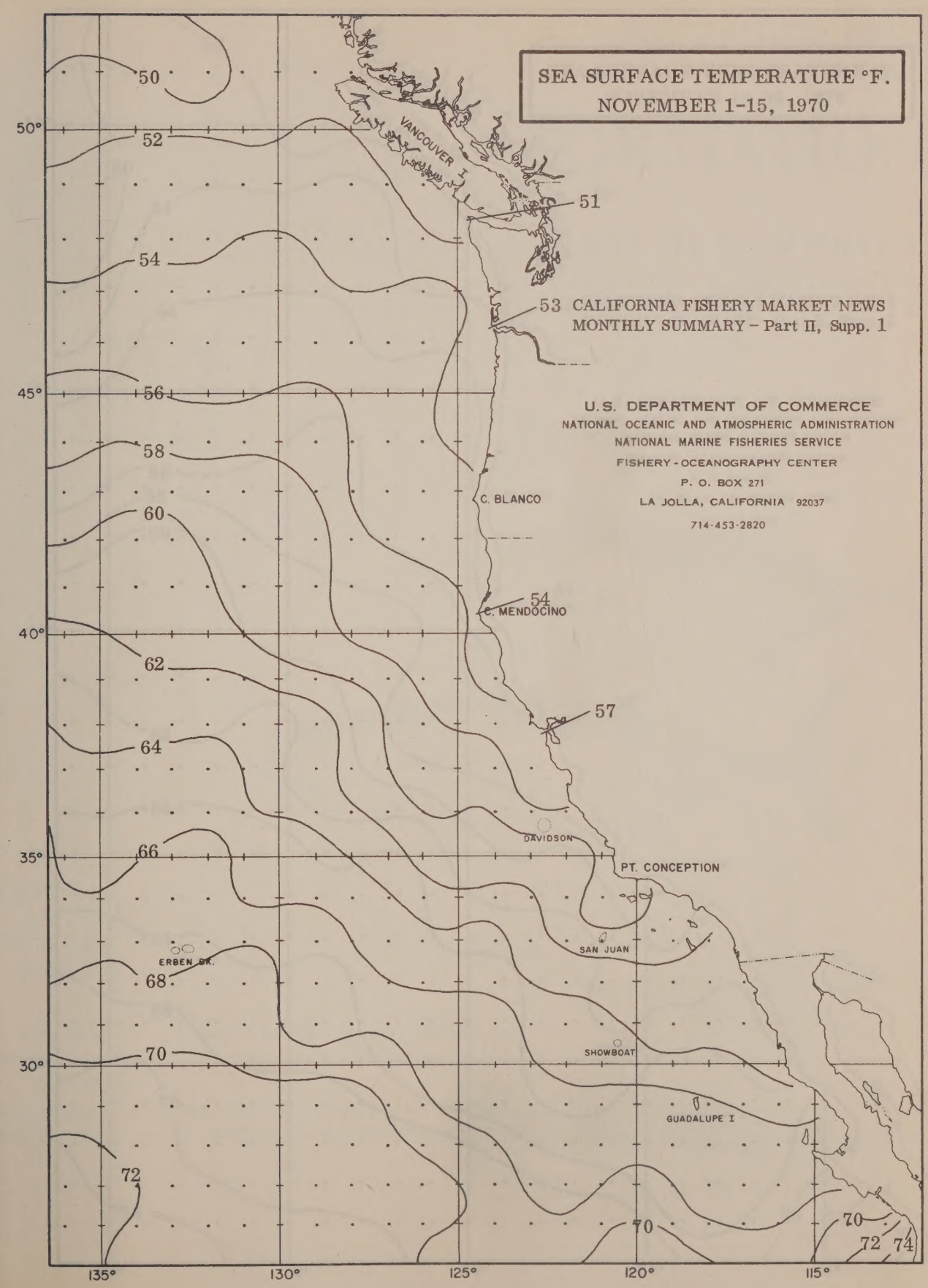

NOVEMBER 1-30, 1970
FIG. 5-MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
HAWAIIAN ISLANDS
PHOENIX ISLANDS
UNION ISLANDS
SAMOA ISLANDS
TONGA ISLANDS
BERMUDES
TUAMOTU ARCHIPELAGO
MARQUESAS
Guaymas
Mazatlan
Acapulco
Salina Cruz
Tampico
Veracruz
Panama
Guayaquil
Honolulu
Christmas
Fanning
Hilo
Nukuhiva
Easter I.
Juan Fernandez
Mas Afuera
Valparaiso
Callao
Iquique
Arica
Antofagasta
Coquimbo
Chanaral
Talcahuano
Corral
Puerto Montt
Chiloe
Ancud
Punta Arenas
Tierra del Fuego
Cape Horn
Falkland Is.
Stanley
Port Stanley
Mar del Plata
Buenos Aires
Montevideo
Rio de Janeiro
Santos
Recife
Fernando de Noronha
Natal
Fortaleza
Belem
Manaus
Maracaibo
Caracas
Trinidad
Barbados
Curacao
Aruba
Cartagena
Barranquilla
Puerto Limon
Colon
Kingston
Jamaica
Havana
Nassau
Miami
Key West
Tampa
Gulf of Campeche
Yucatan
Vera Cruz
Tuxpan
Progreso
Belize
Guatemala
Salvador
Nicaragua
Honduras
Puerto Cortes
Puerto Barrios
Puerto Cabezas
Puerto Limon
Bocas del Toro
Colon
Panama
Balboa
Puerto Armuelles
Puntarenas
Corinto
Acajutla
La Libertad
Puerto Angel
Salina Cruz
Manzanillo
Mazatlan
Guaymas
Ensenada
San Diego
San Francisco
Eureka
Portland
Seattle
Juneau
Sitka
Kodiak
Dutch Harbor
Nome
Point Barrow
Prudhoe Bay
Kotzebue
Fairbanks
Anchorage
Valdez
Cordova
Yakutat
Sitka
Ketchikan
Prince Rupert
Vancouver
Victoria
Port Hardy
Alert Bay
Bella Coola
Kitimat
Prince Rupert
Queen Charlotte Is.
Skidegate
Masset
Sandspit
Ocean Falls
Port Alberni
Nanaimo
Victoria
Vancouver
Bellingham
Seattle
Tacoma
Olympia
Aberdeen
Astoria
Portland
Salem
Eugene
Medford
Crescent City
Eureka
Fort Bragg
San Francisco
Monterey
Santa Cruz
Santa Barbara
Los Angeles
San Diego
Ensenada
Guaymas
Mazatlan
Manzanillo
Salina Cruz
Acapulco
Puerto Angel
Puerto Armuelles
Puntarenas
Corinto
Acajutla
La Libertad
Puerto Barrios
Puerto Cortes
Puerto Cabezas
Puerto Limon
Bocas del Toro
Colon
Panama
Balboa
Puerto Armuelles
Puntarenas
Corinto
Acajutla
La Libertad
Puerto Angel
Salina Cruz
Manzanillo
Mazatlan
Guaymas
Ensenada
San Diego
Los Angeles
Santa Barbara
Santa Cruz
Monterey
San Francisco
Fort Bragg
Eureka
Crescent City
Medford
Eugene
Salem
Portland
Astoria
Aberdeen
Olympia
Tacoma
Seattle
Bellingham
Victoria
Vancouver
Nanaimo
Port Alberni
Ocean Falls
Kitimat
Prince Rupert
Queen Charlotte Is.
Skidegate
Masset
Sandspit
Bella Coola
Alert Bay
Port Hardy
Juneau
Sitka
Ketchikan
Yakutat
Cordova
Valdez
Anchorage
Fairbanks
Kotzebue
Nome
Point Barrow
Prudhoe Bay
Dutch Harbor
Kodiak


NOVEMBER 1-30, 1970
FIG.6-DEVIATION OF SEA SURFACE TEMP (°F.) FROM LONG TERM MEAN. SHADED AREAS COLDER IN 1970.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
HAWAIIAN ISLANDS
PHOENIX ISLANDS
SAMOA ISLANDS
TONGA ISLANDS
COOK ISLANDS
TUAMOTU ARCHIPELAGO
MARQUESAS
Guaymas
Mazatlan
San Blas
Acapulco
Salina Cruz
Guayaquil
Lima
Callao
Panama
Tahiti
Easter Island
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
10°
20°
30°
40°


NOVEMBER 1-30, 1970
FIG.7-DEVIATION OF SEA SURFACE TEMP. (°F.)
FROM NOVEMBER 1969. SHADED
AREAS COLDER IN 1970.
MEXICO
CARIBBEAN SEA
SOUTH
AMERICA
TUAMOTU ARCHIPELAGO
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
30°


NOVEMBER 1961–1970
FIG. 8–OBSERVED MEAN VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1016
1020
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


NOVEMBER 1970
FIG. 9-OBSERVED VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.).
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1024
1020
1016
1020
1016
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.


SEA SURFACE TEMPERATURE °F.
NOVEMBER 1-15, 1970
CALIFORNIA FISHERY MARKET NEWS
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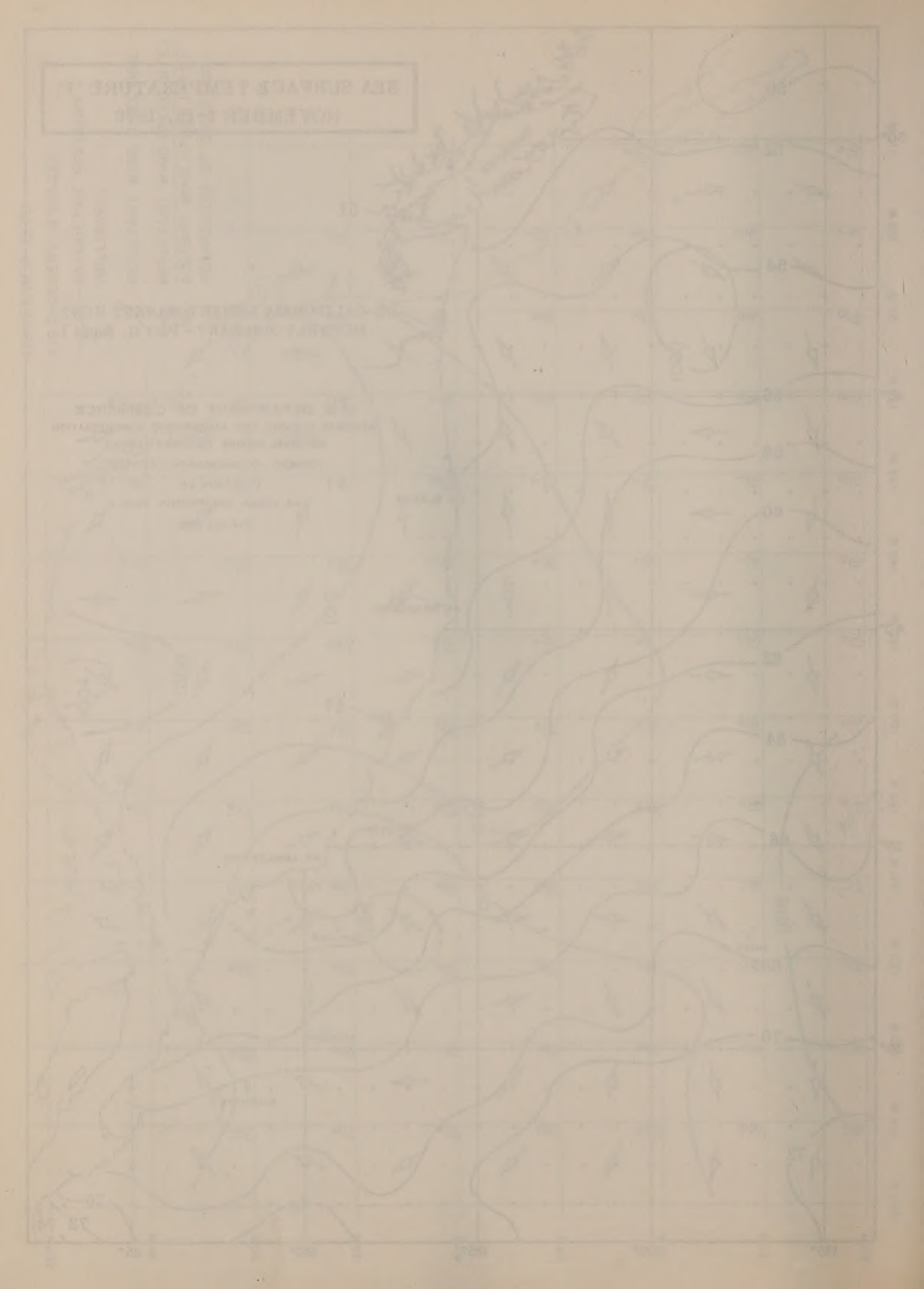
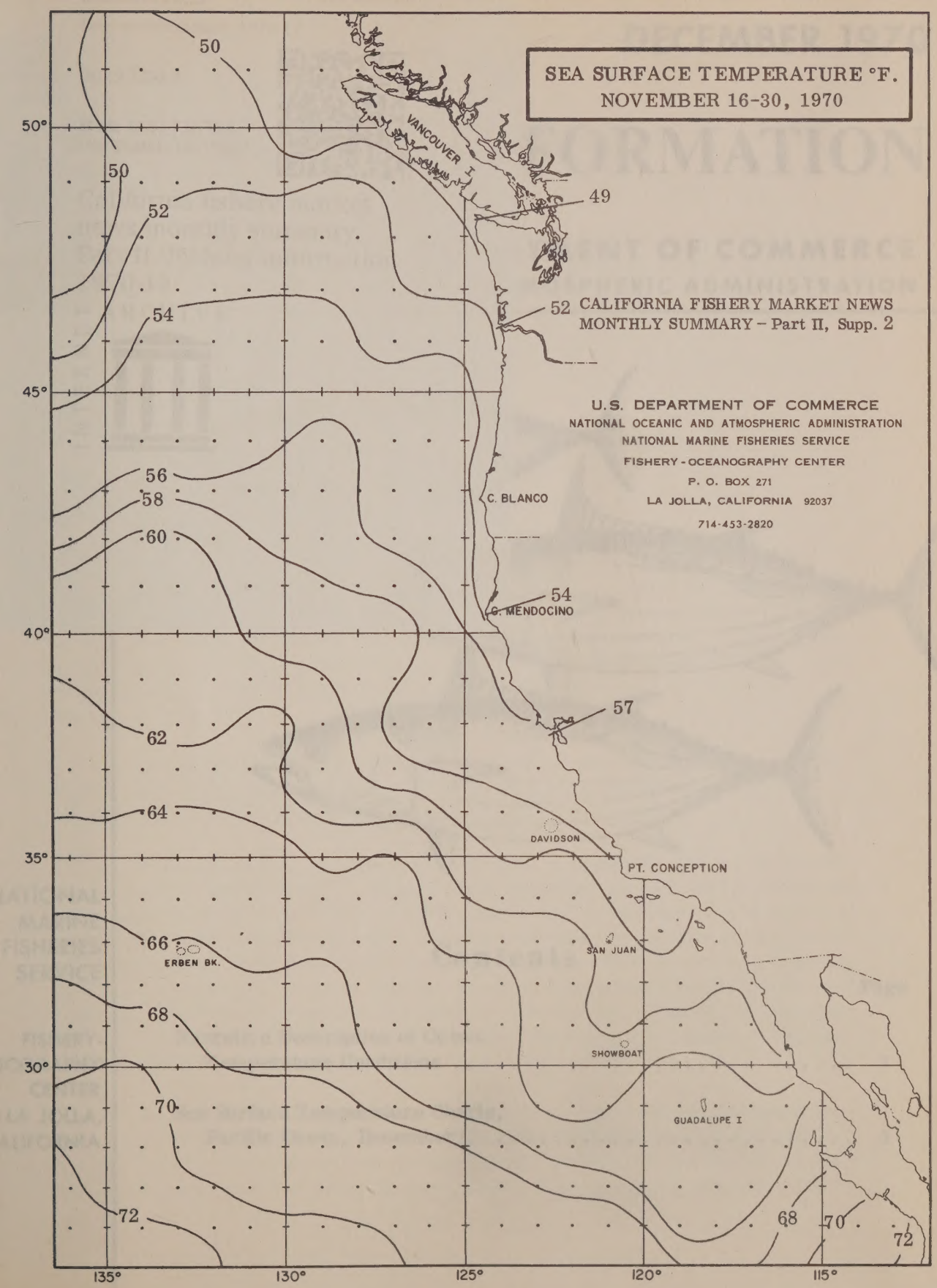
SAN JUAN
SHOWBOAT
GUADALUPE I
ERBEN BK.
50
52
54
56
58
60
62
64
66
68
70
72
74
51
53
54
57
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°




SEA SURFACE TEMPERATURE °F.
NOVEMBER 16-30, 1970
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C. MENDOCINO
DAVIDSON
PT. CONCEPTION
SAN JUAN
SHOWBOAT
GUADALUPE I
ERBEN BK.
50
52
54
56
58
60
62
64
66
68
70
72
49
57
50°
45°
40°
35°
30°
135°
130°
125°
120°
115°